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RAW SEQUENCE LISTING  
PATENT APPLICATION: US/09/769,787

DATE: 03/28/2002  
TIME: 12:59:18

Input Set : D:\P21129WO sequence listing.txt  
Output Set: N:\CRF3\03282002\I769787.raw

3 <110> APPLICANT: Microbial Technics Limited  
 4        Gilbert, Christophe FG  
 5        Hansbro, Philip M  
 7 <120> TITLE OF INVENTION: Proteins  
 9 <130> FILE REFERENCE: PWC/P21129WO  
 C--> 11 <140> CURRENT APPLICATION NUMBER: US/09/769,787  
 12 <141> CURRENT FILING DATE: 2001-01-26  
 14 <150> PRIOR APPLICATION NUMBER: GB 9816337.1  
 15 <151> PRIOR FILING DATE: 1998-03-27  
 17 <150> PRIOR APPLICATION NUMBER: US 60/125164  
 18 <151> PRIOR FILING DATE: 1999-03-19  
 20 <160> NUMBER OF SEQ ID NOS: 388  
 22 <170> SOFTWARE: PatentIn Ver. 2.1  
 24 <210> SEQ ID NO: 1  
 25 <211> LENGTH: 207  
 26 <212> TYPE: PRT  
 27 <213> ORGANISM: Streptococcus pneumoniae  
 29 <400> SEQUENCE: 1  
 30 Met Glu Glu Leu Val Thr Leu Asp Cys Leu Phe Ile Asp Arg Thr Lys  
 31     1               5               10               15  
 33 Ile Glu Ala Asn Ala Asn Lys Tyr Ser Phe Val Trp Lys Lys Thr Thr  
 34     20              25              30  
 36 Glu Lys Phe Ser Ala Lys Leu Gln Glu Gln Ile Gln Val Tyr Phe Gln  
 37     35              40              45  
 39 Glu Glu Ile Thr Pro Leu Leu Ile Lys Tyr Ala Met Phe Asp Lys Lys  
 40     50              55              60  
 42 Gln Lys Arg Gly Tyr Lys Glu Ser Ala Lys Asn Leu Ala Asn Trp His  
 43     65              70              75              80  
 45 Tyr Asn Asp Lys Glu Asp Ser Tyr Thr His Pro Asp Gly Trp Tyr Tyr  
 46     85              90              95  
 48 Arg Phe His His Thr Lys Tyr Gln Lys Thr Gln Thr Asp Phe Gln Gln  
 49     100             105             110  
 51 Glu Ile Lys Val Tyr Tyr Ala Asp Glu Pro Glu Ser Ala Pro Gln Lys  
 52     115             120             125  
 54 Gly Leu Tyr Met Asn Glu Arg Tyr Gln Asn Leu Lys Ala Lys Glu Cys  
 55     130             135             140  
 57 Gln Ala Leu Leu Ser Pro Gln Gly Arg Gln Ile Phe Ala Gln Arg Lys  
 58     145             150             155             160  
 60 Ile Asp Val Glu Pro Val Phe Gly Gln Ile Lys Ala Ser Leu Gly Tyr  
 61     165             170             175  
 63 Lys Arg Cys Asn Leu Arg Gly Lys Arg Gln Val Arg Ile Asp Met Gly  
 64     180             185             190  
 66 Leu Val Leu Met Ala Asn Asn Leu Leu Lys Tyr Ser Lys Met Lys

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67	195	200	205
71 <210>	SEQ ID NO: 2		
72 <211>	LENGTH: 2233		
73 <212>	TYPE: PRT		
74 <213>	ORGANISM: Streptococcus pneumoniae		
76 <400>	SEQUENCE: 2		
77	Met Gly Lys Gly His Trp Asn Arg Lys Arg Val Tyr Ser Ile Arg Lys		
78 1	5	10	15
80	Phe Ala Val Gly Ala Cys Ser Val Met Ile Gly Thr Cys Ala Val Leu		
81 20	25	30	
83	Leu Gly Gly Asn Ile Ala Gly Glu Ser Val Val Tyr Ala Asp Glu Thr		
84 35	40	45	
86	Leu Ile Thr His Thr Ala Glu Lys Pro Lys Glu Glu Lys Met Ile Val		
87 50	55	60	
89	Glu Glu Lys Ala Asp Lys Ala Leu Glu Thr Lys Asn Ile Val Glu Arg		
90 65	70	75	80
92	Thr Glu Gln Ser Glu Pro Ser Ser Thr Glu Ala Ile Ala Ser Glu Lys		
93 85	90	95	
95	Lys Glu Asp Glu Ala Val Thr Pro Lys Glu Glu Lys Val Ser Ala Lys		
96 100	105	110	
98	Pro Glu Glu Lys Ala Pro Arg Ile Glu Ser Gln Ala Ser Asn Gln Glu		
99 115	120	125	
101	Lys Pro Leu Lys Glu Asp Ala Lys Ala Val Thr Asn Glu Glu Val Asn		
102 130	135	140	
104	Gln Met Ile Glu Asp Arg Lys Val Asp Phe Asn Gln Asn Trp Tyr Phe		
105 145	150	155	160
107	Lys Leu Asn Ala Asn Ser Lys Glu Ala Ile Lys Pro Asp Ala Asp Val		
108 165	170	175	
110	Ser Thr Trp Lys Leu Asp Leu Pro Tyr Asp Trp Ser Ile Phe Asn		
111 180	185	190	
113	Asp Phe Asp His Glu Ser Pro Ala Gln Asn Glu Gly Gly Gln Leu Asn		
114 195	200	205	
116	Gly Gly Glu Ala Trp Tyr Arg Lys Thr Phe Lys Leu Asp Glu Lys Asp		
117 210	215	220	
119	Leu Lys Lys Asn Val Arg Leu Thr Phe Asp Gly Val Tyr Met Asp Ser		
120 225	230	235	240
122	Gln Val Tyr Val Asn Gly Gln Leu Val Gly His Tyr Pro Asn Gly Tyr		
123 245	250	255	
125	Asn Gln Phe Ser Tyr Asp Ile Thr Lys Tyr Leu Gln Lys Asp Gly Arg		
126 260	265	270	
128	Glu Asn Val Ile Ala Val His Ala Val Asn Lys Gln Pro Ser Ser Arg		
129 275	280	285	
131	Trp Tyr Ser Gly Ser Gly Ile Tyr Arg Asp Val Thr Leu Gln Val Thr		
132 290	295	300	
134	Asp Lys Val His Val Glu Lys Asn Gly Thr Thr Ile Leu Thr Pro Lys		
135 305	310	315	320
137	Leu Glu Glu Gln Gln His Gly Lys Val Glu Thr His Val Thr Ser Lys		
138 325	330	335	
140	Ile Val Asn Thr Asp Asp Lys Asp His Glu Leu Val Ala Glu Tyr Gln		

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141	340	345	350
143	Ile Val Glu Arg Gly Gly His Ala Val Thr Gly Leu Val Arg Thr Ala		
144	355	360	365
146	Ser Arg Thr Leu Lys Ala His Glu Ser Thr Ser Leu Asp Ala Ile Leu		
147	370	375	380
149	Glu Val Glu Arg Pro Lys Leu Trp Thr Val Leu Asn Asp Lys Pro Ala		
150	385	390	395
152	Leu Tyr Glu Leu Ile Thr Arg Val Tyr Arg Asp Gly Gln Leu Val Asp		
153	405	410	415
155	Ala Lys Lys Asp Leu Phe Gly Tyr Arg Tyr Tyr His Trp Thr Pro Asn		
156	420	425	430
158	Glu Gly Phe Ser Leu Asn Gly Glu Arg Ile Lys Phe His Gly Val Ser		
159	435	440	445
161	Leu His His Asp His Gly Ala Leu Gly Ala Glu Glu Asn Tyr Lys Ala		
162	450	455	460
164	Glu Tyr Arg Arg Leu Lys Gln Met Lys Glu Met Gly Val Asn Ser Ile		
165	465	470	475
167	Arg Thr Thr His Asn Pro Ala Ser Glu Gln Thr Leu Gln Ile Ala Ala		
168	485	490	495
170	Glu Leu Gly Leu Leu Val Gln Glu Glu Ala Phe Asp Thr Trp Tyr Gly		
171	500	505	510
173	Gly Lys Lys Pro Tyr Asp Tyr Gly Arg Phe Phe Glu Lys Asp Ala Thr		
174	515	520	525
176	His Pro Glu Ala Arg Lys Gly Glu Lys Trp Ser Asp Phe Asp Leu Arg		
177	530	535	540
179	Thr Met Val Glu Arg Gly Lys Asn Asn Pro Ala Ile Phe Met Trp Ser		
180	545	550	555
182	Ile Gly Asn Glu Ile Gly Glu Ala Asn Gly Asp Ala His Ser Leu Ala		
183	565	570	575
185	Thr Val Lys Arg Leu Val Lys Val Ile Lys Asp Val Asp Lys Thr Arg		
186	580	585	590
188	Tyr Val Thr Met Gly Ala Asp Lys Phe Arg Phe Gly Asn Gly Ser Gly		
189	595	600	605
191	Gly His Glu Lys Ile Ala Asp Glu Leu Asp Ala Val Gly Phe Asn Tyr		
192	610	615	620
194	Ser Glu Asp Asn Tyr Lys Ala Leu Arg Ala Lys His Pro Lys Trp Leu		
195	625	630	635
197	Ile Tyr Gly Ser Glu Thr Ser Ser Ala Thr Arg Thr Arg Gly Ser Tyr		
198	645	650	655
200	Tyr Arg Pro Glu Arg Glu Leu Lys His Ser Asn Gly Pro Glu Arg Asn		
201	660	665	670
203	Tyr Glu Gln Ser Asp Tyr Gly Asn Asp Arg Val Gly Trp Gly Lys Thr		
204	675	680	685
206	Ala Thr Ala Ser Trp Thr Phe Asp Arg Asp Asn Ala Gly Tyr Ala Gly		
207	690	695	700
209	Gln Phe Ile Trp Thr Gly Thr Asp Tyr Ile Gly Glu Pro Thr Pro Trp		
210	705	710	715
212	His Asn Gln Asn Gln Thr Pro Val Lys Ser Ser Tyr Phe Gly Ile Val		
213	725	730	735

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215 Asp Thr Ala Gly Ile Pro Lys His Asp Phe Tyr Leu Tyr Gln Ser Gln  
216 740 745 750  
218 Trp Val Ser Val Lys Lys Lys Pro Met Val His Leu Leu Pro His Trp  
219 755 760 765  
221 Asn Trp Glu Asn Lys Glu Leu Ala Ser Lys Val Ala Asp Ser Glu Gly  
222 770 775 780  
224 Lys Ile Pro Val Arg Ala Tyr Ser Asn Ala Ser Ser Val Glu Leu Phe  
225 785 790 795 800  
227 Leu Asn Gly Lys Ser Leu Gly Leu Lys Thr Phe Asn Lys Lys Gln Thr  
228 805 810 815  
230 Ser Asp Gly Arg Thr Tyr Gln Glu Gly Ala Asn Ala Asn Glu Leu Tyr  
231 820 825 830  
233 Leu Glu Trp Lys Val Ala Tyr Gln Pro Gly Thr Leu Glu Ala Ile Ala  
234 835 840 845  
236 Arg Asp Glu Ser Gly Lys Glu Ile Ala Arg Asp Lys Ile Thr Thr Ala  
237 850 855 860  
239 Gly Lys Pro Ala Ala Val Arg Leu Ile Lys Glu Asp His Ala Ile Ala  
240 865 870 875 880  
242 Ala Asp Gly Lys Asp Leu Thr Tyr Ile Tyr Tyr Glu Ile Val Asp Ser  
243 885 890 895  
245 Gln Gly Asn Val Val Pro Thr Ala Asn Asn Leu Val Arg Phe Gln Leu  
246 900 905 910  
248 His Gly Gln Gly Gln Leu Val Gly Val Asp Asn Gly Glu Gln Ala Ser  
249 915 920 925  
251 Arg Glu Arg Tyr Lys Ala Gln Ala Asp Gly Ser Trp Ile Arg Lys Ala  
252 930 935 940  
254 Phe Asn Gly Lys Gly Val Ala Ile Val Lys Ser Thr Glu Gln Ala Gly  
255 945 950 955 960  
257 Lys Phe Thr Leu Thr Ala His Ser Asp Leu Leu Lys Ser Asn Gln Val  
258 965 970 975  
260 Thr Val Phe Thr Gly Lys Lys Glu Gly Gln Glu Lys Thr Val Leu Gly  
261 980 985 990  
263 Thr Glu Val Pro Lys Val Gln Thr Ile Ile Gly Glu Ala Pro Glu Met  
264 995 1000 1005  
266 Pro Thr Thr Val Pro Phe Val Tyr Ser Asp Gly Ser Arg Ala Glu Arg  
267 1010 1015 1020  
269 Pro Val Thr Trp Ser Ser Val Asp Val Ser Lys Pro Gly Ile Val Thr  
270 1025 1030 1035 1040  
272 Val Lys Gly Met Ala Asp Gly Arg Glu Val Glu Ala Arg Val Glu Val  
273 1045 1050 1055  
275 Ile Ala Leu Lys Ser Glu Leu Pro Val Val Lys Arg Ile Ala Pro Asn  
276 1060 1065 1070  
278 Thr Asp Leu Asn Ser Val Asp Lys Ser Val Ser Tyr Val Leu Ile Asp  
279 1075 1080 1085  
281 Gly Ser Val Glu Glu Tyr Glu Val Asp Lys Trp Glu Ile Ala Glu Glu  
282 1090 1095 1100  
284 Asp Lys Ala Lys Leu Ala Ile Pro Gly Ser Arg Ile Gln Ala Thr Gly  
285 1105 1110 1115 1120  
287 Tyr Leu Glu Gly Gln Pro Ile His Ala Thr Leu Val Val Glu Glu Gly

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288	1125	1130	1135
290	Asn Pro Ala Ala Pro Ala Val Pro Thr Val Thr Val Gly Gly Glu Ala		
291	1140	1145	1150
293	Val Thr Gly Leu Thr Ser Gln Lys Pro Met Gln Tyr Arg Thr Leu Ala		
294	1155	1160	1165
296	Tyr Gly Ala Lys Leu Pro Glu Val Thr Ala Ser Ala Lys Asn Ala Ala		
297	1170	1175	1180
299	Val Thr Val Leu Gln Ala Ser Ala Ala Asn Gly Met Arg Ala Ser Ile		
300	1185	1190	1195
302	Phe Ile Gln Pro Lys Asp Gly Gly Pro Leu Gln Thr Tyr Ala Ile Gln		
303	1205	1210	1215
305	Phe Leu Glu Glu Ala Pro Lys Ile Ala His Leu Ser Leu Gln Val Glu		
306	1220	1225	1230
308	Lys Ala Asp Ser Leu Lys Glu Asp Gln Thr Val Lys Leu Ser Val Arg		
309	1235	1240	1245
311	Ala His Tyr Gln Asp Gly Thr Gln Ala Val Leu Pro Ala Asp Lys Val		
312	1250	1255	1260
314	Thr Phe Ser Thr Ser Gly Glu Gly Glu Val Ala Ile Arg Lys Gly Met		
315	1265	1270	1275
317	Leu Glu Leu His Lys Pro Gly Ala Val Thr Leu Asn Ala Glu Tyr Glu		
318	1285	1290	1295
320	Gly Ala Lys Asp Gln Val Glu Leu Thr Ile Gln Ala Asn Thr Glu Lys		
321	1300	1305	1310
323	Lys Ile Ala Gln Ser Ile Arg Pro Val Asn Val Val Thr Asp Leu His		
324	1315	1320	1325
326	Gln Glu Pro Ser Leu Pro Ala Thr Val Thr Val Glu Tyr Asp Lys Gly		
327	1330	1335	1340
329	Phe Pro Lys Thr His Lys Val Thr Trp Gln Ala Ile Pro Lys Glu Lys		
330	1345	1350	1355
332	Leu Asp Ser Tyr Gln Thr Phe Glu Val Leu Gly Lys Val Glu Gly Ile		
333	1365	1370	1375
335	Asp Leu Glu Ala Arg Ala Lys Val Ser Val Glu Gly Ile Val Ser Val		
336	1380	1385	1390
338	Glu Glu Val Ser Val Thr Pro Ile Ala Glu Ala Pro Gln Leu Pro		
339	1395	1400	1405
341	Glu Ser Val Arg Thr Tyr Asp Ser Asn Gly His Val Ser Ser Ala Lys		
342	1410	1415	1420
344	Val Ala Trp Asp Ala Ile Arg Pro Glu Gln Tyr Ala Lys Glu Gly Val		
345	1425	1430	1435
347	Phe Thr Val Asn Gly Arg Leu Glu Gly Thr Gln Leu Thr Thr Lys Leu		
348	1445	1450	1455
350	His Val Arg Val Ser Ala Gln Thr Glu Gln Gly Ala Asn Ile Ser Asp		
351	1460	1465	1470
353	Gln Trp Thr Gly Ser Glu Leu Pro Leu Ala Phe Ala Ser Asp Ser Asn		
354	1475	1480	1485
356	Pro Ser Asp Pro Val Ser Asn Val Asn Asp Lys Leu Ile Ser Tyr Asn		
357	1490	1495	1500
359	Asn Gln Pro Ala Asn Arg Trp Thr Asn Trp Asn Arg Thr Asn Pro Glu		
360	1505	1510	1515
			1520

Use of n and/or Xaa has been detected in the Sequence Listing.  
Review the Sequence Listing to insure a corresponding explanation is presented in the <220> to <223> fields of each sequence using n or Xaa.

fjT

**VERIFICATION SUMMARY****PATENT APPLICATION:** US/09/769,787**DATE:** 03/28/2002**TIME:** 12:59:19**Input Set :** D:\P21129WO sequence listing.txt  
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L:11 M:270 C: Current Application Number differs, Replaced Current Application Number

L:12 M:271 C: Current Filing Date differs, Replaced Current Filing Date

L:19634 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:364